

Title (en)

Forward link power control in a cellular system using signal to noise ratio of a received signal

Title (de)

Leistungsregelung der Vorwärtsverbindung in einem zellularen System mit dem Signal-zu-Rausch-Verhältnis des Empfangssignals

Title (fr)

Commande de puissance d'une liaison aval dans un système cellulaire utilisant le rapport signal-bruit d'un signal reçu

Publication

EP 1742380 A3 20070214 (EN)

Application

EP 06022638 A 19990219

Priority

- EP 99908295 A 19990219
- US 7521198 P 19980219

Abstract (en)

[origin: WO9943101A1] A system and method is taught for controlling the power level of transmissions within a communication system having a base station, a mobile station, a communication channel, and a pilot channel. The mobile station determines a signal strength value according to a communication signal received by way of the communication channel. A pilot channel signal is determined according to a pilot signal transmitted by way of the pilot channel. The signal to noise ratio of the communication signal is determined according to the determined signal strength value and the pilot channel signal. The power level of a transmission is controlled according to the signal to noise ratio. The noise level in a communication channel within the communication system is estimated. The pilot channel signal includes pilot energy and pilot noise components. The pilot energy component is removed to provide a remaining pilot signal. Communication system operations are controlled according to the remaining pilot signal. The power levels of transmissions are controlled by determining the signal to noise ratio of a signal within the communication channel and determining a difference signal. The difference signal is formed by determining the difference between determined and desired signal to noise ratios. The difference signal is transmitted between the base station and the mobile station. The pilot channel has at least one frame and the power control signal is inserted into the frame. Thus, information representing the strength of the communication signal is transmitted to the base by way of the pilot channel within the frame. The pilot channel can have two information frames for transmitting the power control signal a plurality of times.

IPC 8 full level

H04B 1/04 (2006.01); **H04B 7/005** (2006.01); **H04B 7/26** (2006.01); **H04L 1/00** (2006.01); **H04W 36/18** (2009.01); **H04W 52/24** (2009.01); **H04W 52/40** (2009.01); **H04W 52/58** (2009.01); **H04W 52/60** (2009.01); **H04W 68/00** (2009.01); **H04W 36/08** (2009.01); **H04W 36/30** (2009.01); **H04W 52/00** (2009.01); **H04W 52/44** (2009.01); **H04W 56/00** (2009.01)

CPC (source: EP FI KR US)

H04B 7/005 (2013.01 - FI); **H04B 7/26** (2013.01 - FI); **H04L 1/0002** (2013.01 - EP KR US); **H04L 1/0025** (2013.01 - EP KR US); **H04L 1/0059** (2013.01 - EP KR US); **H04L 1/0068** (2013.01 - EP KR US); **H04L 1/0071** (2013.01 - EP KR US); **H04L 1/208** (2013.01 - EP US); **H04W 36/18** (2013.01 - EP FI KR US); **H04W 36/302** (2023.05 - EP FI KR US); **H04W 52/24** (2013.01 - KR); **H04W 52/241** (2013.01 - EP KR US); **H04W 52/40** (2013.01 - EP KR US); **H04W 52/58** (2013.01 - EP KR US); **H04W 52/60** (2013.01 - EP KR US); **H04W 68/00** (2013.01 - EP US); **H04W 52/24** (2013.01 - EP US); **H04W 52/44** (2013.01 - EP US); **H04W 56/00** (2013.01 - EP US)

Citation (search report)

- [XA] US 5559790 A 19960924 - YANO TAKASHI [JP], et al
- [A] US 5056109 A 19911008 - GILHOUSEN KLEIN S [US], et al

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

Designated extension state (EPC)

AL LT LV MK RO SI

DOCDB simple family (publication)

WO 9943101 A1 19990826; WO 9943101 A9 19991104; AT E298178 T1 20050715; AT E472861 T1 20100715; AU 2776099 A 19990906; AU 3300899 A 19990906; AU 3300999 A 19990906; AU 747724 B2 20020523; BR 9904864 A 20011016; BR 9904866 A 20000926; CA 2287512 A1 19990826; CA 2287512 C 20070703; CA 2287513 A1 19990826; CA 2287513 C 20100622; CN 100547949 C 20091007; CN 1164044 C 20040825; CN 1242564 C 20060215; CN 1256817 A 20000614; CN 1262820 A 20000809; CN 1750425 A 20060322; DE 69925800 D1 20050721; DE 69925800 T2 20060504; DE 69942551 D1 20100812; EP 0976206 A1 20000202; EP 0983643 A1 20000308; EP 1004217 A1 20000531; EP 1004217 B1 20050615; EP 1742380 A2 20070110; EP 1742380 A3 20070214; EP 1742380 B1 20100630; FI 119539 B 20081215; FI 19992212 A 19991217; FI 19992247 A 19991217; FI 20070413 A 20070525; HK 1086396 A1 20060915; ID 25843 A 20001109; ID 27864 A 20010426; IL 132378 A0 20010319; IL 132378 A 20030112; JP 2001522574 A 20011113; JP 2002503429 A 20020129; JP 2009071845 A 20090402; JP 2010252393 A 20101104; JP 4031058 B2 20080109; JP 4260900 B2 20090430; JP 4594417 B2 20101208; JP 4843099 B2 20111221; KR 100616173 B1 20060825; KR 100628009 B1 20060927; KR 100690132 B1 20070308; KR 20010006545 A 20010126; KR 20010012067 A 20010215; KR 20060039950 A 20060509; NO 322448 B1 20061009; NO 323109 B1 20070102; NO 995079 D0 19991018; NO 995079 L 19991216; NO 995080 D0 19991018; NO 995080 L 19991216; US 6366778 B1 20020402; WO 9943100 A1 19990826; WO 9943180 A1 19990826

DOCDB simple family (application)

US 9903683 W 19990219; AT 06022638 T 19990219; AT 99934393 T 19990219; AU 2776099 A 19990219; AU 3300899 A 19990219; AU 3300999 A 19990219; BR 9904864 A 19990219; BR 9904866 A 19990219; CA 2287512 A 19990219; CA 2287513 A 19990219; CN 200510091946 A 19990219; CN 99800154 A 19990219; CN 99800245 A 19990219; DE 69925800 T 19990219; DE 69942551 T 19990219; EP 06022638 A 19990219; EP 99908295 A 19990219; EP 99934378 A 19990219; EP 99934393 A 19990219; FI 19992212 A 19991013; FI 19992247 A 19991018; FI 20070413 A 20070525; HK 06106134 A 20060526; ID 991394 A 19990219; ID 991422 A 19990219; IL 13237899 A 19990219; JP 2008271981 A 20081022; JP 2010157111 A 20100709; JP 54274499 A 19990219; JP 54283299 A 19990219; KR 19997009635 A 19991018; KR 19997009656 A 19991019; KR 20067006588 A 20060405; NO 995079 A 19991018; NO 995080 A 19991018; US 36029699 A 19990722; US 9903529 W 19990219; US 9903530 W 19990219